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Direct Aesthetic Restorations of Fractured Anterior Teeth using MiCD Protocol

A 20-year-old male patient presented to our practice with a concern of fracture tooth no 11 and 12. History of a minor trauma was revealed 6 months back. On examination, no pain, sensitivity or tenderness was noticed. Radiographic examination and pulp testing revealed no pulpal pathologies associated with fractured teeth. After thorough examination the patient was explained about various treatment options, and possible biological, time and financial cost involved. Patient made the decision to restore the fractured teeth with direct aesthetic composite resins using the MiCD protocol.

After through prophylaxis, the shade was selected using VITA Classical Shade guide and lips were retracted using Opra-gate, and tooth by Teflon tape. After proper etching, FL-Bond-II was applied and cured properly. Beautifil II A2 shade from Shofu Inc. Japan was selected as restorative materials, and used to restore missing dentin part. Lite Arte blue resin stain was applied over the dentin to create translucent effect, and white-yellow stain to accentuate lobes. This was followed by application of final layer of HVT Beautifil Enamel.

Finishing was done using Super-Snap coarse (black) and medium coarse (purple) discs from Shofu Inc, Japan. Pre-polishing and micro surface texture refinement was done using ONE-GLOSS (Shofu Inc. Japan) followed, Super-Snap X-treme green, pink and Super-Snap buff to create high gloss. Patient was quite happy & satisfied with the end result.



Fig. 1 Extra oral view of baseline smile **Fig. 2** Baseline intraoral view, showing fracture defects of tooth no 11 and 12. The Optragate dam was used to retract lips. **Fig. 3** An under exposed and over-saturating image to evaluate internal anatomy and optical properties adjacent and restoring teeth. And planning of internal dentin lobes with yellow sketch **Fig. 4** Restoration planning for inner layer - dentine shade to build the frame and body using freehand technique. **Fig. 5** Restoration planning for middle layer - Lite Arte blue resin stain to create an effect of translucency, and white-yellow to intensify the dentin lobes. **Fig. 6** Restoration planning for final layer - enamel layer extended beyond dentine layer.



Fig.7



Fig.8



Fig.9



Fig.10



Fig.11

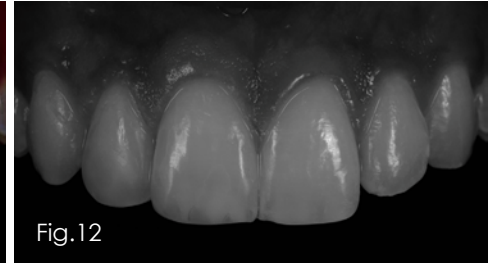


Fig.12



Fig.13

Fig. 7 Shade selection using VITA Classical Shade guide. **Fig. 8** After adapting Teflon on mesial of tooth 12, a minimal tooth was prepared to receive composite resin layer. Beautifil-II A2 shade composite resin was used freehand to create lingual frame and missing body part. Lite Arte blue, white, and yellow resin stains were applied in thin layer as per the restoration plan. The color saturation of the stains was diluted by mixing with Beautifil Flow A2 shade. **Fig. 9** Finally the dentin layer was covered with HVT Beautifil Enamel layer, and the enamel layer was smoothen lightly with no. 5 brush. Similar protocol was followed to restore the tooth no.12. **Fig. 10** Both restorations were finished and polished using - Super-Snap, One Gloss, Super Snap X-treme and Super-Snap buff discs, all from Shofu Inc, Japan. **Fig. 11** Under exposed, over saturated image to verify the hue and chroma of restorations. **Fig. 12** Grey scale image to verify value. **Fig. 13** Post operative smile.



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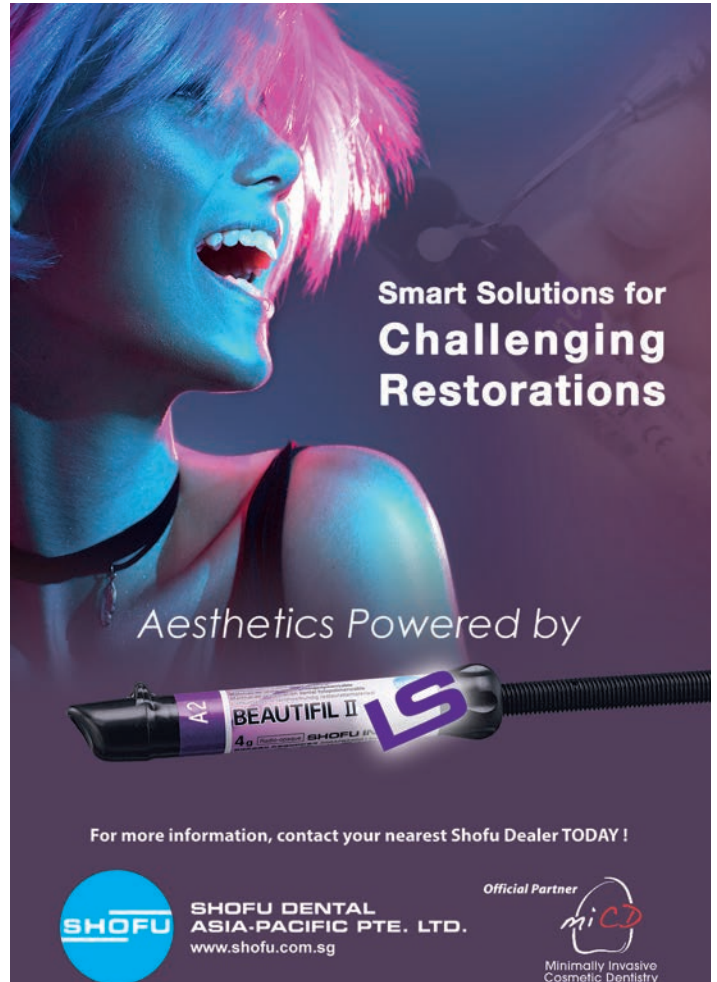


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